

AMENDED CLAIM SET:

1 1. (currently amended) An enhanced T-gate comprising:

2 a free T-gate, said free T-gate having a neck portion, said neck portion having a
3 height, and a T-bar portion, said T-bar portion having overhangs extending beyond said
4 neck portion by a first width; and

5 an insulator layer disposed on each side of said neck portion, forming a sandwich
6 structure with said neck portion along a width direction of said free T-gate, and wherein
7 said insulator layer only partially filling up a volume defined therebetween said overhangs
8 and a surface on which said free T-gate is standing, wherein in said sandwich structure
9 said insulator layer having approximately a C-shape, conformally adhering to a bottom
10 surface of said overhangs, to said neck portion, and to said surface on which said free T-
11 gate is standing, said insulator layer having a thickness which is less than half of said
12 height of said neck portion, wherein said insulator layer covering said surface on which
13 said free T-gate is standing and said bottom surface of said overhang to a distance from
14 said neck portion substantially equal to said first width, whereby that part of said volume
15 which is inside said C-shape is not filled by said insulator layer.

1 2. (canceled)

1 3. (canceled)

1 4. (original) The enhanced T-gate of claim 1, wherein said insulator layer is a low-k
2 material.

1 5. (original) The enhanced T-gate of claim 4, wherein said low-k material is a compound
2 of materials selected from the group consisting of SiCO, SiCOH, SiCH, these silicon
3 containing materials with Si up to 100% replaced by Ge and these silicon containing
4 materials further containing atoms of materials selected from the group consisting of N
5 and F.

1 6. (original) The enhanced T-gate of claim 4, wherein said low-k material is selected from
2 the group consisting of diamond-like carbon, fluorinated amorphous carbon, insulating
3 inorganic oxides, inorganic polymers, organic polymers, photosensitive organic materials,
4 fluorinated organic materials, other carbon-containing materials, hybrid organo-inorganic
5 materials and silsesquioxane-based materials.

1 7. (currently amended) A MODFET device comprising an enhanced T-gate, said
2 enhanced T-gate further comprising:

3 a free T-gate, said free T-gate having a neck portion and a T-bar portion, said T-
4 bar portion having overhangs extending beyond said neck portion; and

5 an insulator layer disposed on each side of said neck portion, forming a sandwich
6 structure with said neck portion along a width direction of said free T-gate, and wherein

1 said insulator layer only partially filling up a volume defined therebetween said overhangs
2 and a surface on which said free T-gate is standing, wherein in said sandwich structure
3 said insulator layer having approximately a C-shape, conformally adhering to a bottom
4 surface of said overhangs, to said neck portion, and to said surface on which said free T-
5 gate is standing, said insulator layer having a thickness which is less than half of said
6 height of said neck portion, wherein said insulator layer covering said surface on which
7 said free T-gate is standing and said bottom surface of said overhang to a distance from
8 said neck portion substantially equal to said first width, whereby that part of said volume
9 which is inside said C-shape is not filled by said insulator layer.

1 8. (original) The MODFET device of claim 7, further comprising a self-aligned
2 source/drain metallurgy, wherein a borderline of said metallurgy is defined by said
3 insulator layer.

1 9. (currently amended) An integrated circuit comprising at least one MODFET device,
2 said MODFET device comprising an enhanced T-gate, wherein said enhanced enhanced
3 T-gate further comprising:

4 a free T-gate, said free T-gate having a neck portion and a T-bar portion, said T-
5 bar portion having overhangs extending beyond said neck portion; and

6 an insulator layer disposed on each side of said neck portion, forming a sandwich
7 structure with said neck portion along a width direction of said free T-gate, and wherein

1 said insulator layer only partially filling up a volume defined therebetween said overhangs
2 and a surface on which said free T-gate is standing; and
3 a multilevel interconnect structure of low-k interconnect dielectrics.

1 10. (original) The integrated circuit of claim 9, wherein said at least one MODFET
2 further comprising a self-aligned source/drain metallurgy, wherein a borderline of said
3 metallurgy is defined by said insulator layer.

1 11. (canceled)

2 12. (currently amended) The integrated circuit of claim ~~11~~ 9, wherein said low-k
3 interconnect dielectrics leaving voids in said volume only partially filled up by said
4 insulator layer.

5 13. (currently amended) The integrated circuit of claim ~~11~~ 9, wherein said low-k
6 interconnect dielectrics are materials selected from the group consisting of SiCO, SiCOH,
7 SiCH, these silicon containing materials with Si up to 100% replaced by Ge,
8 diamond-like carbon, fluorinated amorphous carbon, insulating inorganic oxides,
9 inorganic polymers and organic polymers.

1 14. - 30. (canceled)